

REMARKS

This responds to the Office Action mailed on May 4, 2004. No claims are amended, canceled or added. Thus, claims 1, 3-31, 33-59 and 62-77 remain pending. Of these pending claims, claims 22-29, 53-59, 63-77 currently stand withdrawn.

Restriction / Election**Paragraph 1**

New claims 66-77 were withdrawn from consideration as being directed to a non-elected invention. The rational for withdrawing claims 66-77 was that independent claims 66 and 71 comprise the element of providing an indication / a means for providing an indication of the type of tachycardia identified, and that this was not found in originally submitted independent claims 1, 14, 30, 44 and 62. Applicant respectfully traverses the withdrawal of independent claims 66 and 71.

Applicant asserts that new independent claims 66 and 71 are generic to Groups I-VI as identified by the Examiner. With respect to Group I, Applicant asserts that controlling pacing in a first manner for an identified first one of the at least two different types of supraventricular tachycardia and in a second manner for an identified second one of the at least two different types of supraventricular tachycardia provides an indication corresponding to the identified type of regular rapid supraventricular tachycardia.

Applicant supported this position in the response dated February 4, 2004 by providing dependent claims that depend on claim 66 and that correspond with Groups I-VI identified by the Examiner. Applicant respectfully asserts that these dependent claims show that claim 66 is generic to the identified groups. These dependent claims were identified in the response as follows:

Claim 67 depends on independent claim 66, and generally corresponds to claim 1, which has been classified as **Group I** by the Examiner. Claim 68 depends on claim 67, and generally corresponds to claim 14, which has been classified as **Group II** by the Examiner. Claim 69 depends on claim 67, and generally corresponds to claim 64, which has been classified as **Group VI**

by the Examiner. Claim 70 depends on independent claim 66, and generally corresponds to claim 24, which has been classified as **Group III** by the Examiner. Claim 74 indirectly depends on independent claim 71, and generally corresponds to claim 63, which has been classified as **Group V** by the Examiner. Claim 75 indirectly depends on independent claim 71, and generally corresponds to claim 53, which has been classified as **Group IV** by the Examiner. Upon the allowance of a generic claim, Applicant respectfully requests consideration of all withdrawn claims.

For example, claim 67 depends on claim 66 and further clarifies that providing an indication corresponding to the type of regular rapid supraventricular tachycardia identified includes controlling pacing of the heart in a first manner for an identified first one of the at least two different types of supraventricular tachycardia and in a second manner for an identified second one of the at least two different types of supraventricular tachycardia. Thus, dependent claim 67 falls within elected Group I as identified by the Examiner. Applicant respectfully asserts that independent claim 66, which is the base claim of 67, should be considered with Group I as it is generic to Group I (generic or other linking claims must be examined with any one of the linked inventions that may be elected MPEP §814).

Claims 66 and 71 link proper apparatus and process claims (MPEP 809.03 (Item C)). Claims 66 and 71 are believed to be generic to Groups I-VI as evidenced by their dependent claims, as identified above. Applicant respectfully requests consideration of independent claims 66 and 71 as generic claims along with the previously elected claims. Upon the allowance of a generic claim, Applicant respectfully requests consideration of all withdrawn claims (37 CFR §1.141(a)).

Applicant notes that claims 66 and 71 are new claims asserted to be generic to Groups I-VI. The fact that these claims do not control pacing or establish a discrimination criteria does not affect the status of claims 66 and 71 as generic claims.

Paragraph 2.

The rejection states: *the Examiner is unable to respond to the arguments of a generic claim as Applicant's position is not clear and appears to be inconsistent with the previous position of the existence of a linking claim.*

With respect to the groups as identified by the Examiner (where claim 1 is part of Group I), new claims 66 and 71 link proper apparatus and process claims and new claims 66 and 71 function as genus claims linking species claims, as evidenced by their dependent claims (37 CFR §1.141(a)). Common types of linking claims include genus claims linking species claims (MPEP §809.03 (item A)) and claims to “means” for practicing a process linking proper apparatus and process claims (MPEP §809.03 (item C)). Other linking claims that are inseparable from the identified groups can link otherwise divisible inventions.

In the response dated February 4, 2004, Applicant traversed the Examiner's argument regarding claim 1 as a linking claim because claim 1 was improperly argued to be not generic because the other groups include additional elements in addition to claim 1 rather than claim 1 includes additional elements to the other groups. However, Applicant added new generic claims 66 and 71 in the response dated February 4, 2004 such that the linking claim status of claim 1 is moot. These generic claims must be examined with the elected group (MPEP §814).

Applicant respectfully requests consideration of independent claims 66 and 71 as generic claims to the elected group. For the reasons provided above with respect to their dependent claims, Applicant believes that claims 66 and 71 are generic to all of the non-elected groups as well. Upon the allowance of a generic claim, Applicant respectfully requests consideration of all withdrawn claims (37 CFR §1.141(a)).

§102 Rejection of the Claims

Claims 1, 3, 5-14, 16-21, 30, 31, 33, 35-45, 47-52 and 62 were rejected under 35 USC § 102(b) as being anticipated by Gillberg et al. (U.S. Patent No 5,755,736). Applicant respectfully traverses.

In the present application, discrimination criteria is used to distinguish at least two different types of supraventricular tachycardia having regular rapid supraventricular heart rates, and an indicator or therapy is provided for each distinguished supraventricular tachycardia. An example of a supraventricular tachycardia having regular rapid supraventricular heart rates is atrial flutter, which refers to a rapid regular atrial contraction. Thus, for example, the present application discloses subject matter that is capable of providing different therapies for faster and slower atrial flutters.

Applicant is unable to find, among other things, in the cited portions of Gillberg et al. a showing or fair suggestion of distinguishing at least two different types of supraventricular tachycardia having regular rapid supraventricular heart rates from each other, and providing an indicator or therapy for each of the distinguished supraventricular tachycardia having regular rapid supraventricular heart rates.

The Examiner responded to Applicant's previous arguments as follows:

Multiple unique therapies (figure 11-632, 634) are programmed in the microprocessor for each type of regular rapid supraventricular tachycardia, including a slower rate atrial tachycardia (632) and a faster rate atrial flutter (634) (col. 3 @ 19-27; col. 7 @ 4-28; col. 8 @ 51-65 (rate is a factor used to determine the different therapies for the different rate tachycardias); col. 14 @ 9-13; col. 17 at 45-47 (atrial tracking and analysis is preformed); col. 26 @ 3-5 (atrial tachycardia and fibrillation are treated)). The interval (ranging 100 ms to 450 ms depending on the type of tachycardia), regularity and pattern information of the supraventricular tachycardia are monitored to determine appropriate therapy (col. 23 @ 21 - col. 24 @ 12).

Applicant respectfully traverses the Examiner's assertions. The therapies 632 and 634 in FIG. 11 are clearly labeled atrial fibrillation (AF) therapy (632) and atrial tachycardia (AT) therapy (634), and thus do not provide a therapy for regular rapid SVT with regular rapid SVT

heart rates. Atrial fibrillation does not provide a regular heart rate, and thus is not a regular rapid supraventricular tachycardia. Rather, atrial fibrillation refers to rapid, irregular contractions of the atria. Thus, the rejection improperly characterizes AF therapy 632 as a therapy for a regular rapid SVT with regular rapid SVT heart rates.

Applicant is unable to find in any of the cited passages a showing or fair suggestion that a distinction is made between types of regular rapid supraventricular tachycardia having regular rapid supraventricular heart rates. Column 3, lines 19-27 relate to delivering the next scheduled anti-arrhythmia therapy based on a time duration since a preliminary detection of atrial arrhythmia and other associated criteria. Column 8, lines 61-65 indicate that therapies for tachycardia termination may also vary with the rate of the detected tachycardia, with therapies increasing in aggressiveness as the rate of the detected tachycardia increases. Column 14 lines 9-13 relate to a device diagnosing the presence of an arrhythmia (i.e. tachycardia or fibrillation), and delivers and appropriate therapy, (e.g. anti-tachycardia pacing a cardioversion pulse or a defibrillation pulse). Column 17 lines 45-47 relate to either delivering therapy or preventing the delivery of therapy depending on the rhythm identified. Column 26, lines 3-5 relate to using different sustained duration for different arrhythmia types (sustained AF or AT at Col. 25 lines 46-49). Column 23, line 21 to column 24 line 12 relate to rules for triggering delivery of therapies in response to detected sustained AF and/or sustained AT (Col. 23, lines 3-7), including a first criterion (AF Rate Zone Criterion) associated with detection of atrial fibrillation (Col. 23, lines 20-21), a second criterion (AT Rate Zone Criterion) associated with detection of atrial tachycardia (Col. 23, lines 47-48), and a third criterion (AF/AT Evidence Counter Criterion) associated with detection of both AF and AT which supports or refutes the presence of an atrial arrhythmia using an counting algorithm (Col. 23, lines 54-58).

The Gillberg et al. reference does not appear to provide different pacing therapies in response to the individual SVT rejection rules 606, 608, 610, 612, 614. Rather, and an AF therapy 632 is provided in response to a sustained AF 622, and an AT therapy 634 is provided in response to a sustained AT 624 (Figure 11). Applicant is unable to find, among other things, in the cited portions of the Gillberg et al. reference a showing or a fair suggestion that different

therapies are provided for different supraventricular tachycardias having regular rapid supraventricular heart rates.

With respect to withdrawn generic claim 66, which Applicant respectfully asserts should be considered with elected Group I, Applicant is unable to find, among other things, in the cited portions of the Gillberg et al. reference, a method for providing pacing therapy to the heart where discrimination criteria for distinguishing at least two different types of supraventricular tachycardia having regular rapid supraventricular heart rates is established and an indication corresponding to the identified type of regular rapid supraventricular tachycardia is provided, as recited in the claim. With respect to withdrawn generic claim 71, which Applicant respectfully asserts should be considered with elected Group I, Applicant is unable to find, among other things, in the cited portions of the Gillberg et al. reference, an implantable cardiac device comprising means for establishing discrimination criteria for distinguishing at least two different types of supraventricular tachycardia having regular rapid supraventricular heart rates, and means for providing an indication corresponding to the type of regular rapid supraventricular tachycardia identified, as recited in the claim.

With respect to independent claim 1, Applicant is unable to find, among other things, in the cited portions of the Gillberg et al. reference, a method for providing pacing therapy to a heart that includes controlling pacing of the heart in a first manner for an identified first one of the at least two different types of supraventricular tachycardia and in a second manner for an identified second one of the at least two different types of supraventricular tachycardia, as recited in the claim. The supraventricular tachycardia recited in the claim have regular rapid supraventricular heart rates. Claims 3 and 5-13 depend, either directly or indirectly, on independent claim 1, and are believed to be patentable for at least the reasons provided with respect to independent claim 1.

With respect to independent claim 14, Applicant is unable to find, among other things, in the cited portions of the Gillberg et al. reference, a method for providing pacing therapy to a heart where pacing of the heart is controlled to provide atrial antitachycardia pacing to the heart if a slower rate supraventricular tachycardia is identified as occurring and providing a second type of pacing control if a fast atrial flutter is identified as occurring, as recited in the claim. The

recited supraventricular tachycardia have regular rapid supraventricular heart rates. Claims 16-21 depend, either directly or indirectly, on independent claim 14, and are believed to be patentable for at least the reasons provided with respect to independent claim 14.

With respect to independent claim 30, Applicant is unable to find, among other things, in the cited portions of the Gillberg et al. reference, a cardiac pacing device that includes a processor for distinguishing at least two different types of regular rapid heart rates, and for controlling the pacer to provide a first pacing therapy to the heart for a first type of regular supraventricular tachycardia and a second pacing therapy to the heart for a second type of regular supraventricular tachycardia, as recited in the claim. Claims 31, 33 and 35-43 depend, either directly or indirectly, on independent claim 30, and are believed to be patentable for at least the reasons provided with respect to independent claim 30.

With respect to independent claim 44, Applicant is unable to find, among other things, in the cited portions of the Gillberg et al. reference, a processor for distinguishing between regular rapid supraventricular tachycardia heart rates including distinguishing between fast atrial flutter and a slower rate supraventricular tachycardia and for controlling the pacer to provide atrial antitachycardia pacing to the heart if a slower rate supraventricular tachycardia is identified as occurring and to provide a second type of pacing if a fast atrial flutter is identified as occurring, as recited in the claim. Claims 45 and 47-52 depend, either directly or indirectly, on claim 44 are believed to be patentable at least for the reasons provided with respect to claim 44.

With respect to independent claim 62, Applicant is unable to find, among other things, in the cited portions of the Gillberg et al. reference, a processor for distinguishing between regular rapid supraventricular tachycardia heart rates including distinguishing between fast atrial flutter and a slower rate supraventricular tachycardia to identify whether a fast atrial flutter or a slower rate supraventricular tachycardia is occurring, and for controlling the pacer to provide atrial antitachycardia pacing to the heart for an identified slower rate supraventricular tachycardia and to provide a second type of pacing for an identified fast atrial flutter, as recited in the claim.

Applicant respectfully requests withdrawal of the §102 rejection, and reconsideration and allowance of the claims.

§103 Rejection of the Claims

Claims 4, 15, 34 and 46 were rejected under 35 USC § 103(a) as being unpatentable over Gillberg et al. (U.S. Patent No 5,755,736) in view of Ayers et al. (U.S. Patent No. 5,549,641). Applicant respectfully traverses for at least the following reasons.

Applicant is unable to find, among other things, in the cited portions of Ayers et al., either alone or in combination with the cited portions of Gillberg et al., a showing or fair suggestion of distinguishing at least two different types of supraventricular tachycardia having regular rapid supraventricular heart rates from each other, and providing an indicator or therapy for each of the distinguished supraventricular tachycardia having regular rapid supraventricular heart rates. The rejection states: *Ayers et al. teaches atrial fibrillation therapy using identification between fast atrial flutter at a first high rate and a second atrial flutter at a second lower rate for the purpose of precisely identifying the arrhythmia so the therapy can be matched to the relative degree of organization / disorganization of the detected atrial arrhythmia.*

Applicant respectfully traverses. The rejection refers to atrial fibrillation therapy rather than therapies for regular rapid supraventricular tachycardias. Applicant respectfully requests the Examiner to cite portions of Ayers relied on to distinguish between the first atrial flutter at a first high rate and a second atrial flutter at a second lower rate. In Ayers et al., the atrial rhythm is classified for (a) highly organized atrial flutter, (b) type 1 atrial fibrillation of intermediate organization, and (c) type 2 atrial fibrillation of high disorganization (column 6 lines 55-65). Applicant is unable to find a showing or fair suggestion of distinguishing between atrial flutters as asserted by the Examiner.

Claim 4 depends on independent claim 1, and is believed to be patentable for at least the reasons provided with respect to independent claim 1. Claim 15 depends on independent claim 14, and is believed to be patentable for at least the reasons provided with respect to independent claim 14. Claim 34 indirectly depends on independent claim 30, and is believed to be patentable for at least the reasons provided with respect to independent claim 30. Claim 46 depends on independent claim 44, and is believed to be patentable for at least the reasons provided with respect to independent claim 44. Applicant respectfully requests withdrawal of the §103 rejection, and reconsideration and allowance of the claims.

RESPONSE UNDER 37 CFR § 1.116 – EXPEDITED PROCEDURE

Serial Number: 09/712600

Filing Date: November 14, 2000

Title: METHOD AND APPARATUS FOR USING ATRIAL DISCRIMINATION ALGORITHMS TO DETERMINE OPTIMAL PACING THERAPY AND THERAPY TIMING

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CONCLUSION

Applicant respectfully submits that the claims are in condition for allowance and notification to that effect is earnestly requested. The Examiner is invited to telephone Applicant's attorney (612) 373-6960 to facilitate prosecution of this application.

If necessary, please charge any additional fees or credit overpayment to Deposit Account No. 19-0743.

Respectfully submitted,

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CERTIFICATE UNDER 37 CFR 1.8: The undersigned hereby certifies that this correspondence is being deposited with the United States Postal Service with sufficient postage as first class mail, in an envelope addressed to: Mail Stop AF, Commissioner of Patents, P.O. Box 1450, Alexandria, VA 22313-1450, on this 3rd day of September, 2004.

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